



Attorney Docket No. 0756-2131

2811
#19/Response
(115)
10/29/03
Smith

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Shunpei YAMAZAKI et al.

Serial No. 09/535,015

Filed: March 24, 2000

For: METHOD OF MANUFACTURING A
SEMICONDUCTOR DEVICE

) Group Art Unit: 2811

) Examiner: S. Crane

) CERTIFICATE OF MAILING

) I hereby certify that this correspondence is being
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) P.O. Box 1450, Alexandria, VA 22313-1450, on

10.14.03

Adelle M. Stampen

RESPONSE

Honorable Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

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The Official Action mailed July 14, 2003, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on March 24, 2000, September 5, 2001, November 30, 2001, July 18, 2002, and February 24, 2003. However, the Applicants have not received acknowledgment of the Information Disclosure Statements filed on December 19, 2000, and March 17, 2003. Please note, the Applicants requested consideration of these Information Disclosure Statements in the Amendment filed February 24, 2003. The Applicants respectfully request that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of these Information Disclosure Statements.

The Official Action rejects claims 2-43 as obvious based on the combination of U.S. Patent No. 5,210,050 to Yamazaki et al., U.S. Patent No. 4,140,548 to Zimmer, and U.S. Patent No. 5,488,000 to Zhang et al., either alone or in combination with one

or more of the following references: U.S. Patent No. 5,372,860 to Fehlner et al., U.S. Patent No. 5,365,080 to Yamazaki et al., U.S. Patent No. 5,313,076 to Yamazaki et al., and U.S. Patent No. 5,913,111 to Kataoka et al. Specifically, the Official Action rejects claims 2 and 4 based on Yamazaki '050, Zimmer and Zhang, claim 3 based on Yamazaki '050, Zimmer, Zhang and Fehlner, claim 5 based on Yamazaki '050, Zimmer, Zhang, Fehlner and Yamazaki '080, claim 6 based on Yamazaki '050, Zimmer, Zhang, Fehlner, Yamazaki '080 and Yamazaki '076, and claims 7-43 based on Yamazaki '050, Zimmer, Zhang, Fehlner, Yamazaki '080, Yamazaki '076 and Kataoka. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Yamazaki '050, Zimmer, Zhang, Fehlner, Yamazaki

'080, Yamazaki '076 and Kataoka do not teach or suggest an (electroluminescent) EL display device having at least one thin film transistor comprising a first insulating film comprising a thermal oxide film of a semiconductor film thereon, a second insulating film comprising a deposition film over the semiconductor film, and the semiconductor film containing hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$ and oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less.

In the "Conclusion" section, the Official Action states the following: "Applicant appears to argue that there is some claim element recited that is [not] taught in any of the references. No such claim element was identified, however" (page 3, Paper No. 17). The Applicants respectfully disagree. In the Amendment filed February 24, 2002, the Applicants argued as follows (emphasis in original):

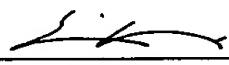
Specifically, the prior art does not teach or suggest an EL display device having the feature recited in each of independent claims 2, 7, 15, 21, 29 and 35. That is, for example, an EL display device having at least one thin film transistor comprising a first insulating film comprising a thermal oxide film of a semiconductor film thereon, a second insulating film comprising a deposition film over the semiconductor film, and the semiconductor film containing hydrogen atoms at a concentration of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{21} \text{ cm}^{-3}$ and oxygen atoms at a concentration of $2 \times 10^{19} \text{ cm}^{-3}$ or less (claim 2) is not disclosed or suggested either explicitly or inherently.

In other words, the prior art does not teach or suggest an EL display device, much less an EL display device comprising the features recited in the independent claims of the present invention. The Official Action asserts that "Zhang et al. teaches at column 1, to use TFTs in display devices, an obvious use for the '050 device as well, in order to impart the advantages of the '050 device to the display TFTs" (page 3, Paper No. 11). However, Zhang does not broadly disclose "to use TFTs in display devices." Zhang discloses the following: "Known semiconductor devices having TFTs on an insulating substrate made of glass or the like include active-matrix liquid-crystal displays and image sensors which use such TFTs to activate pixels" (column 1, lines 14-17). The Applicants respectfully submit that the prior art references, either alone or in combination, do not teach or suggest an EL display device.

Since Yamazaki '050, Zimmer, Zhang, Fehlner, Yamazaki '080, Yamazaki '076 and Kataoka do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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